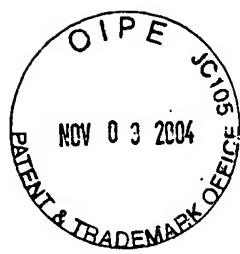


SEQUENCE LISTING



<110> Thompson, Julia E.
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<120> Specific Binding Members for Human Transforming Growth Factor Beta:
Materials and Methods

<130> 213839-00031

<140> To be assigned
<141> 2003-07-23

<150> 09/054,847
<151> 1998-04-03

<150> 08/571,755
<151> 1995-12-13

<160> 125

<170> PatentIn version 3.1

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Asn

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
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Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

35

40

45

Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asp Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Gly Arg Thr Leu Glu Ser Ser Leu Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Lys Thr Gly Glu Tyr Ser Gly Tyr Asp Ser Ser Gly Val Asp Val
100 105 110

Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser
115 120

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20 25 30

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35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Ile Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Thr Gly Glu Tyr Ser Gly Tyr Asp Thr Ser Gly Val Glu Leu
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
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gcagactccg tgaaggcccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
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gtctcctca 369

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1 5 10 15

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20 25 30

Asp Met His Trp Val Arg Gln Pro Pro Ala Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Ser Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Thr Gly Glu Tyr Ser Gly Tyr Asp Thr Ser Gly Val Glu Leu
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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gggagagccc ctaaggtctt gatctataag gcatctactt tagaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta ccccgtggac gttcggccaa 300
gggaccaagc tggagatcaa acgt 324

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<211> 108
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<400> 14

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Arg Ala Pro Lys Val Leu Ile
35 40 45

Tyr Lys Ala Ser Thr Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg
100 105

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342

<210> 16
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1 5 10 15

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser
20 25 30

Tyr Asn Lys Met Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Lys Leu Leu Ile Asn Trp Ala Ser Thr Arg Glu Ser Gly Val
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ala Thr Pro Leu Thr Phe Gly His Gly Thr Lys Val Glu Ile
100 105 110

Lys Arg

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<212> DNA
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acgtgccaag gagacagcct caaaagctac tatgcaagtt ggtaccagca gaagccagga 120
caggcccctg tacttgtcat ctatggtaa aacagccggc cctccggat cccagaccga 180
ttctctggct ccagctcagg aaacacagct tccttgacca tcactgggc tcaggcggaa 240
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Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Lys Ser Tyr Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Gly Glu Asn Ser Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Thr His
85 90 95

Leu Glu Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

<210> 19

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Ala Arg Thr Gly Glu Tyr Ser Gly Tyr Asp Ser Ser Gly Val Asp Val
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Trp

<210> 20

<211> 17

<212> PRT

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<400> 20

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1 5 10 15

Trp

<210> 21
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<400> 21

Ala Arg Thr Arg Glu Tyr Ser Gly His Asp Ser Ser Gly Val Asp Asp
1 5 10 15

Trp

<210> 22
<211> 17
<212> PRT
<213> Human

<400> 22

Ala Arg Thr Gly Pro Phe Ser Gly Tyr Asp Ser Ser Gly Glu Asp Val
1 5 10 15

Arg

<210> 23
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<212> PRT
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<400> 23

Ala Arg Thr Glu Glu Tyr Ser Gly Tyr Asp Ser Ser Gly Val Asp Val
1 5 10 15

Trp

<210> 24
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<400> 24

Ala Gln Thr Arg Glu Tyr Thr Gly Tyr Asp Ser Ser Gly Val Asp Val
1 5 10 15

Trp

<210> 25
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Ala Arg Thr Glu Glu Tyr Ser Gly Phe Asp Ser Thr Gly Glu Asp Val
1 5 10 15

Trp

<210> 26
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<400> 26

Ala Arg Thr Glu Glu Phe Ser Gly Tyr Asp Ser Ser Gly Val Asp Val
1 5 10 15

Trp

<210> 27
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<212> PRT
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Ala Arg Thr Gly Glu Tyr Ser Gly Tyr His Ser Ser Gly Val Asp Val
1 5 10 15

Arg

<210> 28
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1 5 10 15

Trp

<210> 29
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<400> 29

Ala Arg Ala Gly Pro Phe Ser Gly Tyr Asp Ser Ser Gly Glu Asp Val
1 5 10 15

Arg

<210> 30
<211> 17
<212> PRT
<213> Human

<400> 30

Ala Arg Thr Gly Pro Phe Ser Gly Tyr Asp Ser Ser Gly Glu Asp Val
1 5 10 15

Trp

<210> 31
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<212> PRT
<213> Human

<400> 31

Ala Arg Thr Glu Glu Phe Ser Gly Tyr Asp Ser Ser Gly Val Asp Val
1 5 10 15

Trp

<210> 32
<211> 17
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<400> 32

Ala Arg Thr Gly Glu Tyr Ser Gly Tyr Asp Ser Ser Gly Glu Leu Val
1 5 10 15

Trp

<210> 33
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<212> PRT
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<400> 33

Ala Arg Thr Glu Glu Phe Ser Gly Tyr Asp Ser Thr Gly Glu Glu Val
1 5 10 15

Trp

<210> 34
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<400> 34

Ala Arg Thr Glu Glu Phe Ser Gly Tyr Asp Ser Ser Gly Val Asp Val
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Trp

<210> 35
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1 5 10 15

Trp

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ccagccaagg ggctggagtg ggtggcagtt atatcatatg atggaagcaa taaatactac 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
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<210> 37

<211> 117
<212> PRT
<213> Human

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Glu Ile Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Ala Met His Trp Val Arg Gln Ala Pro Ala Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ala Gly Leu Glu Thr Thr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser Ser Gly
115

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gggaaagccc ctaagctcct gatctataag gcatctactt tagaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tggacagaa ttcactctca caatcagcag tctgcaacct 240
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<211> 108
<212> PRT
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<400> 39

Asp Val Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Lys Ala Ser Thr Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Arg
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Asp Ile Lys Arg
100 105

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<211> 327
<212> DNA
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caggcccctg tacttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttcgctggct ccaactcagg aaacacagct tccttgacca tcactggggc tcaggcggag 240
gatgaggctg actattactg tagctcccg gacagcagtg gtaaccatgt ggtttcggc 300
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<210> 41
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Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
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Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ala Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Arg Asp Ser Ser Gly Asn His
85 90 95

Val Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105

<210> 42
<211> 330
<212> DNA
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ttctctggct ccagctcagg aaacacagct tccttgcacca tcactgggc tcaggcggaa 240
gatgaggctg actattactg taactcccg gacagcagta gtacccatcg aggggtgttc 300
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<210> 43
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Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
1 5 10 15

Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Ser Thr His
85 90 95

Arg Gly Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

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<211> 324
<212> DNA
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aggttcagcg gcagtggatc tggcacagat ttcactctca ccatcaacag cctgcagcct 240
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gggacacgac tggagattaa acgt 324

<210> 45
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<400> 45

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1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Gly Asp Asp
20 25 30

Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Ile Leu Leu Ile
35 40 45

Tyr Gly Thr Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Ser Asn Tyr Pro Leu
85 90 95

Thr Phe Gly Gly Thr Arg Leu Glu Ile Lys Arg
100 105

<210> 46
<211> 321
<212> DNA
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<400> 46
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caggcccctg tacttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttctctggct ccagctcagg gaacacagct tccttgacca tcactggggc tcgggcggaa 240

gatgagggtg tctattactg taactcccg gacagcagtg gtgcggttt cggcggaggg 300
accaagctga ccgtcctagg t 321

<210> 47
<211> 107
<212> PRT
<213> Human

<400> 47

Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
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Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Asn Tyr Tyr Ala
20 25 30

Asn Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Arg Ala Glu
65 70 75 80

Asp Glu Gly Val Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Ala Val
85 90 95

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105

<210> 48
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<400> 48

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cagccccctc tacttgtcgt ctatgctaaa aataagcggc cctcagggat cccagaccga 180

ttctctggct ccagctcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 240

gatgaggctg actattactg tcattcccg gacagcagtg gtaaccatgt gctttcggc 300

ggagggacca agctgaccgt cctaggt 327

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Thr Val Arg Ile Thr Ser Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Thr
20 25 30

Asn Trp Phe Gln Gln Lys Pro Gly Gln Pro Pro Leu Leu Val Val Tyr
35 40 45

Ala Lys Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys His Ser Arg Asp Ser Ser Gly Asn His
85 90 95

Val Leu Phe Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105

<210> 50
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<212> DNA
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<400> 50

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<210> 51
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Lys Leu Ala Ala Thr Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu
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Ala Val Ala Pro Gly Ala His Ser Gln Val Gln Leu Gln Gln Ser Gly
20 25 30

Ala Lys Gly Pro Arg Ser Pro Ser Pro Gln Val Ser Gly Ser Glu Phe
35 40 45

<210> 52
<211> 144
<212> DNA
<213> Human

<400> 52
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cagttgcacc tggctgtggg ccccaggggc cacggcgagc aggcaaaaca cgcgccaggt 120
ccagtcctatg gtggcggcaa gctt 144

<210> 53
<211> 234
<212> DNA
<213> Human

<400> 53
aagttcgcc accatggat ggagctgtat catcctcttc ttggtagcaa cagctacagg 60
taaggggctc acagtagcag gcttgaggc tggacatata tatgggtgac aatgacatcc 120
actttgcctt tctctccaca ggtgtgcact ccgacattga gtcacccag tctccagaca 180
aagctcgagc tgaaacgtga gtagaattta aactttgctt cctcaattgg atcc 234

<210> 54
<211> 15
<212> PRT
<213> Human

<400> 54

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr
1 5 10 15

<210> 55
<211> 8
<212> PRT
<213> Human

<400> 55

Gly Val His Ser Asp Ile Glu Leu
1 5

<210> 56
<211> 4
<212> PRT
<213> Human

<400> 56

Leu Glu Leu Lys
1

<210> 57
<211> 234
<212> DNA
<213> Human

<400> 57

ggatccaatt gaggaagcaa agtttaaatt ctactcacgt ttcagctcg a gctttgtctg 60
gagactgggt gagctcaatg tcggagtgc a cacctgtgga gagaaggca aagtggatgt 120
cattgtcacc catatatatg tccagacctc a aagcctgcta ctgtgagccc cttacctgta 180
gctgttgcta ccaagaagag gatgatacag ctccatccc tggtggcgaa gctt 234

<210> 58
<211> 324
<212> DNA
<213> Human

<400> 58

gaaattgtgc tgactcagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gggcattgga gatgattgg gctggtatca gcagaagcca 120
gggaaagccc ctatcctcct gatctatggt acatccactt tacaaagtgg ggtcccgta 180
aggttcagcg gcagtggatc tggcacagat ttcactctca ccatcaacag cctgcagcct 240
gaagattttg caacttatta ctgtctacaa gattccaatt acccgctcac tttcggcgaa 300
gggacacgac tggagattaa acgt 324

<210> 59
<211> 108
<212> PRT
<213> Human

<400> 59

Glu Ile Val Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Gly Asp Asp
20 25 30

Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Ile Leu Leu Ile
35 40 45

Tyr Gly Thr Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Ser Asn Tyr Pro Leu
85 90 95

Thr Phe Gly Gly Thr Arg Leu Glu Ile Lys Arg
100 105

<210> 60

<211> 345

<212> DNA

<213> Human

<400> 60

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tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatgg acagcctgag agccgaggac acggccgtgt attactgtgg aagaacgctg 300

gagtctagtt tgtggggcca aggcaccctg gtcaccgtct cctca 345

<210> 61

<211> 115

<212> PRT

<213> Human

<400> 61

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asp Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Gly Arg Thr Leu Glu Ser Ser Leu Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 62
<211> 330
<212> DNA
<213> Human

<400> 62
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acatgccaag gagacagcct cagaagctat tatgcaagct ggtaccagca gaagccagga 120
caggccccctg tacttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttctctggct ccagctcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taactcccg gacagcagta gtacccatcg aggggtgttc 300
ggcggaggga ccaagctgac cgtccttaggt 330

<210> 63
<211> 110
<212> PRT
<213> Human

<400> 63

Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
1 5 10 15

Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Ser Thr His
85 90 95

Arg Gly Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

<210> 64
<211> 327
<212> DNA
<213> Human

<400> 64
tcgtctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccaag gagacagcct cagaagctat tatgcaagct ggtaccagca gaagccagga 120
caggccccctg tacttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttcgctggct ccaactcagg aaacacagct tccttgacca tcactggggc tcaggcggag 240
gatgaggctg actattactg tagctcccg gacagcagtg gtaaccatgt gttttcggc 300
ggagggacca agctgaccgt cctaggt 327

<210> 65
<211> 109
<212> PRT
<213> Human

<400> 65

Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
1 5 10 15

Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala

20

25

30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ala Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Arg Asp Ser Ser Gly Asn His
85 90 95

Val Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105

<210> 66
<211> 324
<212> DNA
<213> Human

<400> 66
gatgttgtga tgactcagtc tccatcctcc ctgtctgcat ctgttaggaga cagagtcacc 60
atcacttgcc gggccagtca gggcatttagc aattattttag cctggtatca gcaaaaacca 120
gggaaagccc ctaagctcct gatctataag gcatctactt tagaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagaa ttcactctca caatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta cccctcgaac gttcggccaa 300
gggaccaaag tggatatcaa acgt 324

<210> 67
<211> 108
<212> PRT
<213> Human

<400> 67

Asp Val Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Lys Ala Ser Thr Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Arg
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Asp Ile Lys Arg
100 105

<210> 68

<211> 84

<212> DNA

<213> Recombinant

<400> 68

cgtggtcctt tgccccaga cgtccacacc actagaatcg tagccactat attccccagt 60

tcgcgcacag taatacacacag ccgt 84

<210> 69

<211> 23

<212> DNA

<213> Recombinant

<400> 69

agcggataac aatttcacac agg 23

<210> 70

<211> 21

<212> DNA

<213> Recombinant

<400> 70

gtcgtttc cagacgttag t 21

<210> 71

<211> 21

<212> DNA

<213> Recombinant

<400> 71

accgccagag ccacccgc c 21

<210> 72
<211> 21
<212> DNA
<213> Recombinant

<400> 72
ggcggagggtg gctctggcgg t 21

<210> 73
<211> 21
<212> DNA
<213> Recombinant

<400> 73
ctcttctgag atgagtttt g 21

<210> 74
<211> 24
<212> DNA
<213> Recombinant

<400> 74
tgaggagacg gtgaccaggg ttcc 24

<210> 75
<211> 68
<212> DNA
<213> Recombinant

<400> 75
gmacccctggc caccgtctcc tcaggtggag gcgggttcagg cggaggtggc agcggcggtg 60

gcggatcg 68

<210> 76
<211> 68
<212> DNA
<213> Recombinant

<400> 76
ggacaatggc caccgtctct tcaggtggag gcgggttcagg cggaggtggc agcggcggtg 60

gcggatcg 68

<210> 77
<211> 68
<212> DNA
<213> Recombinant

<400> 77
ggaccacggc caccgtctcc tcaggtggag gcgggttcagg cggaggtggc agcggcggtg 60

gcggatcg

68

<210> 78
<211> 56
<212> DNA
<213> Recombinant

<400> 78
gtcctcgcaa ctgcggccca gccggccatg gcccagrtgc agctggtgca rtctgg

56

<210> 79
<211> 56
<212> DNA
<213> Recombinant

<400> 79
gtcctcgcaa ctgcggccca gccggccatg gccsaggtcc agctggtrca gtctgg

56

<210> 80
<211> 56
<212> DNA
<213> Recombinant

<400> 80
gtcctcgcaa ctgcggccca gccggccatg gcccagrtca ccttgaagga gtctgg

56

<210> 81
<211> 56
<212> DNA
<213> Recombinant

<400> 81
gtcctcgcaa ctgcggccca gccggccatg gccsaggtgc agctggtgga gtctgg

56

<210> 82
<211> 56
<212> DNA
<213> Recombinant

<400> 82
gtcctcgcaa ctgcggccca gccggccatg gccgaggtgc agctggtgga gwcygg

56

<210> 83
<211> 56
<212> DNA
<213> Recombinant

<400> 83
gtcctcgcaa ctgcggccca gccggccatg gcccaggtgc agctacagca gtgggg

56

<210> 84
<211> 56
<212> DNA
<213> Recombinant

<400> 84
gtcctcgcaa ctgcggccca gccggccatg gcccagstgc agctgcagga gtcsgg 56

<210> 85
<211> 56
<212> DNA
<213> Recombinant

<400> 85
gtcctcgcaa ctgcggccca gccggccatg gccgargtgc agctggtgca gtctgg 56

<210> 86
<211> 56
<212> DNA
<213> Recombinant

<400> 86
gtcctcgcaa ctgcggccca gccggccatg gcccaggtac agctgcagca gtcagg 56

<210> 87
<211> 62
<212> DNA
<213> Recombinant

<400> 87
agctcgtcc tcgcaactgc ggcccctggg gcccacagcg aggtgcagct ggtggagtct 60

gg 62

<210> 88
<211> 54
<212> DNA
<213> Recombinant

<400> 88
cgagtcattc tgcacttgga tccactcacc tgaggagacg gtgaccgtgg tccc 54

<210> 89
<211> 30
<212> DNA
<213> Recombinant

<400> 89
gagaatcgtt ctgggattcc tgagggccgg 30

<210> 90
<211> 53
<212> DNA
<213> Recombinant

<400> 90
agctcgtcc tcgcaactgg tgtgcactcc cacgttatac tgactcagga ccc 53

<210> 91
<211> 49
<212> DNA
<213> Recombinant

<400> 91
ggtcctcgca actgcggatc cactcaccta ggacggtcag cttggtccc 49

<210> 92
<211> 54
<212> DNA
<213> Recombinant

<400> 92
cgagtcattc tgcacttgg tcactcacc tgaggagacg gtgaccagg tgcc 54

<210> 93
<211> 53
<212> DNA
<213> Recombinant

<400> 93
agctcgtcc tcgcaactgg tgtgcactcc gatgttgtga tgactcagtc tcc 53

<210> 94
<211> 49
<212> DNA
<213> Recombinant

<400> 94
ggtcctcgca actgcggatc cactcacgtt tgatatccac tttggtccc 49

<210> 95
<211> 53
<212> DNA
<213> Recombinant

<400> 95
agctcgtcc tcgcaactgg tgtgcactcc tcgtctgagc tgactcagga ccc 53

<210> 96
<211> 30
<212> DNA

<213> Recombinant

<400> 96
ccggccctca ggaatccca accgattctc 30

<210> 97
<211> 30
<212> DNA
<213> Recombinant

<400> 97
ctaagcttac tgagcacaca ggacctcacc 30

<210> 98
<211> 52
<212> DNA
<213> Recombinant

<400> 98
tttggatatc tctccacagg tgtccactcc gaggtgcagc tggggagtc tg 52

<210> 99
<211> 43
<212> DNA
<213> Recombinant

<400> 99
atggccctt ggtgaaagct gaagagacgg tgaccagggt gcc 43

<210> 100
<211> 59
<212> DNA
<213> Recombinant

<400> 100
ttgaattcag gtggggcac ttctccctct atgaacattc cgtaggggcc actgtttc 59

<210> 101
<211> 45
<212> DNA
<213> Recombinant

<400> 101
ttaacgatt cgaacgccac catggatgg agctgtatca tcctc 45

<210> 102
<211> 43
<212> DNA
<213> Recombinant

<400> 102

gtcctaggtg agtagatcta tctggataa gcatgctgtt ttc

43

<210> 103
<211> 29
<212> DNA
<213> Recombinant

<400> 103
gatctactca cctaggacgg tcagcttgg

29

<210> 104
<211> 22
<212> PRT
<213> Human

<400> 104

Thr Gln His Ser Arg Val Leu Ser Leu Tyr Asn Thr Ile Asn Pro Glu
1 5 10 15

Ala Ser Ala Ser Pro Cys
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<210> 105
<211> 10
<212> PRT
<213> Human

<400> 105

Arg Gln Leu Ser Leu Gln Gln Arg Met His
1 5 10

<210> 106
<211> 10
<212> PRT
<213> Human

<400> 106

Asp Pro Met Asp Met Val Leu Lys Leu Cys
1 5 10

<210> 107
<211> 10
<212> PRT
<213> Human

<400> 107

Trp Ser Glu Phe Met Arg Gln Ser Ser Leu

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5

10

<210> 108
<211> 10
<212> PRT
<213> Human

<400> 108

Val Glu Ser Thr Ser Leu Gln Phe Arg Gly
1 5 10

<210> 109
<211> 17
<212> PRT
<213> Synthetic

<400> 109

Cys Gly Gly Thr Gln His Ser Arg Val Leu Ser Leu Tyr Asn Thr Ile
1 5 10 15

Asn

<210> 110
<211> 13
<212> PRT
<213> Synthetic

<400> 110

Gly Pro Glu Ala Ser Arg Pro Pro Lys Leu His Pro Gly
1 5 10

<210> 111
<211> 115
<212> PRT
<213> Human

<400> 111

Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Trp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Val Trp Val
35 40 45

Ser Arg Ile Asn Ser Asp Gly Ser Ser Thr Ser Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Glu Asn Ser Tyr Val Pro Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 112
<211> 118
<212> PRT
<213> Human

<400> 112

Gln Val Gln Leu Gln Glu Ser Gly Gly Val Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Gly Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Ser Val Arg Asn Asp Gly Ser Asn Thr Tyr Tyr Thr Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Pro Arg Asp Asn Thr Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Ser Asp Pro Leu Arg Tyr Pro Ile Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser

115

<210> 113
<211> 345
<212> DNA
<213> Human

<400> 113
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tcctgtgcag cctctggatt cacccatgtt agctactggc tgcactgggt ccggccaaatct 120
ccagggaagg ggctgggttg ggtctcacgt attaatagtg atgggagtag cacaagctac 180
gcggactccg tgaaggcccg attcaccatc tccagagaca acgccaagaa cacgctgtat 240
ctgcaaatga acagtctgag agccgaggac acggccgtgt attactgtgc aaggagaat 300
agttatgtgc cttgggggca gggcacccctg gtcaccgtct cctca 345

<210> 114
<211> 354
<212> DNA
<213> Human

<400> 114
caggtgcaac tgcaggagtc ggggggaggc gtgggtccagc ctggggggtc cctgagactc 60
tcctgtgcag cgtctggatt cacccatgtt ggctatggc tgcactgggt ccggccaggct 120
ccaggcaagg ggctggagtg ggtggcatct gtacggAACgt atggaaatggaa tacatactac 180
acagactccg tgaaggcccg attcaccatc cccagagaca acaccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtac gtctgatcct 300
ttacgctatc ctattgacta ctggggccag ggaaccctgg tcaccgtctc gagt 354

<210> 115
<211> 369
<212> DNA
<213> Human

<400> 115
caggtcacct tgaaggagtc tgggggaaagc gtgggtccagc ctggggaggc cctgagactc 60
tcctgtgcag cctctggatt cacccatgtt agctatggc tgcactgggt ccggccaggct 120
ccaggcaagg ggctggagtg ggtggcgtt atatcatatg atggaaatggaa taaatactat 180
gcagactccg tgaaggcccg attcaccatc tccagagaca attccaaagaa cacgcaatgtat 240
ctgcaaatga acagcctgag agctgaagac acggcagagt attactgtgc gagaactggg 300

gaatatagtg gccacgcac tactggagag aacgtctggg gccggggcac cctggtcacc 360
gtctcgagt 369

<210> 116
<211> 123
<212> PRT
<213> Human

<400> 116

Gln Val Thr Leu Lys Glu Ser Gly Gly Ser Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Gln Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Glu Tyr Tyr Cys
85 90 95

Ala Arg Thr Gly Glu Tyr Ser Gly His Ala Ser Thr Gly Glu Asn Val
100 105 110

Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 117
<211> 336
<212> DNA
<213> Human

<400> 117
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tcttgttctg gaggcagatc caacatcggc agtaatactg taaaagtggta tcagcagctc 120
ccaggaacgc ccccaaact cctcatctat ggcaatgatc agcggccctc agggatccct 180

gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcac tgggttccag 240
gctgaagacg aggctgacta ttactgccag tcatatgaca gcagcctgag gggttcgagg 300
gtcttcggaa ctgggaccaa ggtcaccgtc ctaggt 336

<210> 118
<211> 112
<212> PRT
<213> Human

<400> 118

Ser Tyr Val Leu Thr His Pro Pro Ser Val Ser Gly Thr Pro Gly Gln
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Gly Arg Ser Asn Ile Gly Ser Asn
20 25 30

Thr Val Lys Trp Tyr Gln Gln Leu Pro Gly Thr Pro Pro Lys Leu Leu
35 40 45

Ile Tyr Gly Asn Asp Gln Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Val Gln
65 70 75 80

Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser Leu
85 90 95

Arg Gly Ser Arg Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
100 105 110

<210> 119
<211> 381
<212> DNA
<213> Human

<400> 119
caggtacaac ctcagcagtc tggggagag gtgaagcagc ctggggcctc cgtgaaggtt 60
tcctgttaagg cgtctggata cacttcacc agcttctata tgaactgggt gcgacaggcc 120
cccgacaaag ggcttgagtg gatggaaata atcagccctc gtgggtgtac gacaagttac 180
gcacagaact tccagggcag agtcaccatg accagggaca cgtccacaag cacagtctac 240
atggagctga gcagcctgag atctgaggac acggccgtgt attattgtgc gataattggg 300

ggtactacta tgagagtagg ggggccccat gctttgata tctggggcca agggacaatg 360
gtcaccgtca ccgtctcttc a 381

<210> 120
<211> 127
<212> PRT
<213> Human

<400> 120

Gln Val Gln Pro Gln Gln Ser Gly Gly Glu Val Lys Gln Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Phe
20 25 30

Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Ile Ile Ser Pro Arg Gly Gly Thr Thr Ser Tyr Ala Gln Asn Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Ile Ile Gly Gly Thr Thr Met Arg Val Gly Gly Pro Asp Ala Phe
100 105 110

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Thr Val Ser Ser
115 120 125

<210> 121
<211> 381
<212> DNA
<213> Human

<400> 121
gaggtgcagc tgggtggagtc tgggggaggc gtgggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagg aactatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agtcgaggac acggctgttt attactgtgc gagaagatgg 300
tatggtggca gtggttattg gggccacttc tactcctaca tggacggctg gggcaaagg 360
accaaggtca ccgtctcctc a 381

<210> 122
<211> 127
<212> PRT
<213> Human

<400> 122

Glu Val Gln Leu Val Glu Ser Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Asn Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys
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Tyr Met Asp Gly Trp Gly Lys Gly Thr Lys Val Thr Val Ser Ser
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Glu Val Val Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Gly Asp Asp
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Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Ile Leu Leu Ile
35 40 45

Tyr Gly Thr Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
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Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Ser Asn Tyr Pro Leu
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Thr Gln Tyr Ser Lys Val Leu Ser Leu Tyr Asn Gln His Asn
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